

## STATEMENT OF BASIS

as required by LAC 33:IX.3109, for draft **Louisiana Pollutant Discharge Elimination System Permit No. LA0125148; AI 165360; PER20100001** to discharge to waters of the **State of Louisiana** as per LAC 33:IX.2311.

The **permitting authority** for the Louisiana Pollutant Discharge Elimination System (LPDES) is:

Louisiana Department of Environmental Quality  
Office of Environmental Services  
P. O. Box 4313  
Baton Rouge, Louisiana 70821-4313

- I. THE APPLICANT IS:** Town of Livingston  
SUMA Crossing Sewage Treatment Plant  
P.O. Box 430  
Livingston, LA 70754
- II. PREPARED BY:** Angela Marse
- DATE PREPARED:** April 20, 2010
- III. PERMIT ACTION:** Issue LPDES permit LA0125148, AI 165360; PER20100001  
LPDES application received: February 22, 2010

**IV. FACILITY INFORMATION:**

- A. The application is for the discharge of treated sanitary wastewater from a publicly owned treatment works serving residential and commercial users in the Livingston and Satsuma area.
- B. The permit application includes wastewater from the following industrial discharger:
- | <u>Name of Discharger</u>                 | <u>Flow</u> |
|---|-------------|
| North Oaks Hospital and Diagnostic Clinic | 86,600 gpd  |
- C. The facility is located on South Satsuma Road ½ mile south of I-12 Interchange in Livingston, Livingston Parish.
- D. The treatment facility consists of a bar screen, nutrient removal system, advanced biological treatment system, clarifier, rotating drum filter, and a return activated sludge sump. Disinfection is by ultraviolet light.

**E. Outfall 001**

Discharge Location: Latitude 30° 27' 36" North  
Longitude 90° 47' 40" West

Description: treated sanitary wastewater

Design Capacity: 0.5 MGD

Type of Flow Measurement which the facility is currently using:  
Continuous Recorder

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**V. RECEIVING WATERS:**

The discharge is into Colyell Creek, thence into the Amite River in subsegment 040305 of the Lake Pontchartrain Basin.

The designated uses and degree of support for Segment 040305 of the Lake Pontchartrain Basin are as indicated in the table below<sup>1/</sup>:

Degree of Support of Each Use						
Primary Contact Recreation	Secondary Contact Recreation	Propagation of Fish & Wildlife	Outstanding Natural Resource Water	Drinking Water Supply	Shell fish Propagation	Agriculture
Not Supported	Full	Not Supported	N/A	N/A	N/A	N/A

<sup>1/</sup>The designated uses and degree of support for Segment 040305 of the Lake Pontchartrain Basin are as indicated in LAC 33:IX.1123.C.3, Table (3) and the 2006 Water Quality Management Plan, Water Quality Inventory Integrated Report, Appendix A, respectively.

**VI. ENDANGERED SPECIES:**

The receiving waterbody, Subsegment 040305 of the Lake Pontchartrain Basin, has been identified by the U.S. Fish and Wildlife Service (FWS) as habitat for the Gulf Sturgeon which is listed as a threatened/endangered species. LDEQ has determined that the issuance of the LPDES permit is not likely to have an adverse affect upon the Gulf Sturgeon since effluent limitations are established in the permit to ensure protection of aquatic life and maintenance of the receiving water as aquatic habitat. As set forth in the Memorandum of Understanding between the LDEQ and the FWS, consultation with the FWS is not required because this discharge type is not identified in Section II.2 of the letter dated January 5, 2010 from Rieck (FWS) to Nolan (LDEQ).

**VII. HISTORIC SITES:**

The discharge will be from a new facility. LDEQ has consulted with the State Historic Preservation Officer (SHPO) in a letter dated March 4, 2010 to determine whether construction-related activities could potentially affect sites or properties on or eligible for listing on the National Register of Historic Places. SHPO's response, dated March 31, 2010 stated that no known historic properties will be affected by the project.

**VIII. PUBLIC NOTICE:**

Upon publication of the public notice, a public comment period shall begin on the date of publication and last for at least 30 days thereafter. During this period, any interested persons may submit written comments on the draft permit and may request a public hearing to clarify issues involved in the permit decision at this Office's address on the first page of the statement of basis. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

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Public notice published in:

Local newspaper of general circulation  
Office of Environmental Services Public Notice Mailing List

For additional information, contact:

Mrs. Angela Marse  
Water Permits Division  
Department of Environmental Quality  
Office of Environmental Services  
P. O. Box 4313  
Baton Rouge, Louisiana 70821-4313

**IX. PROPOSED PERMIT LIMITS:**

**Final Effluent Limits:**

**OUTFALL 001**

Section 303 (d) of the Clean Water Act as amended by the Water Quality Act of 1987, and EPA's regulations at 40 CFR 130 require that each state identify those waters within its boundaries not meeting water quality standards. The Clean Water Act further requires states to implement plans to address impairments. LDEQ is developing Total Maximum Daily Loadings Studies (TMDLs) to address impaired waterbodies. Segment 040305, Colyell Creek system, of the Lake Pontchartrain Basin is on the 2006 Integrated 303(d) List of Impaired Waterbodies. The suspected causes of impairment are nitrate/nitrite, low dissolved oxygen, fecal coliform, phosphorus, and mercury. To date no TMDLs have been completed for this waterbody. A reopener clause will be established in the permit to allow for the requirement of more stringent effluent limitations and requirements as imposed by a TMDL.

Until completion of TMDLs for the Lake Pontchartrain Basin, those suspected causes for impairment which can be directly attributed to the public owned treatment works (POTW) point source category have been addressed in the formulation of the effluent limitations and other requirements of this permit. The following discussion presents a detailed justification for including or eliminating the aforementioned causes in the permit.

**Mercury**

The named waterbody in segment 040305, Colyell Creek, is impaired for mercury. The source of mercury has been identified as atmospheric deposition. The facility will receive wastewater from a hospital. This could potentially contribute to the receiving waterbody's mercury impairment. For these reasons, the Livingston Parish will be required to develop a Mercury Minimization Program Plan (MMPP) for the SUMA Crossing WWTP. It is the position of this Department that development and implementation of a Mercury Minimization Program Plan (MMPP) continues to be the most efficient reduction of mercury discharges to surface waters of Louisiana. Pollution prevention and waste minimization are more reasonably accomplished and cost productive than the implementation of controls and technologies to meet such stringent end-of-pipe mercury limitations. The MMPP employs EPA approved analytical methods (*EPA Methods 1631, 245.7*) through effluent sampling and system wide monitoring programs to locate and identify potential sources of mercury in the treatment system. Once identified the MMPP integrates cost-effective reduction controls (either treatment or prevention based) to reduce or eliminate mercury from the source. Should the TMDL for mercury determine a mercury effluent limitation is necessary; a reopener clause has been included in the draft permit. Data collected from monitoring required by the MMPP may help the facility evaluate compliance with any final mercury TMDL.

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**Low Dissolved Oxygen**

LAC 33:IX.1123. Table 3 establishes dissolved oxygen (DO) criteria for each subsegment. For Subsegment 040305 the dissolved oxygen criteria is 5 mg/l. Water quality criteria are achievable measures of water quality established to support the designated uses of the receiving waterbody. Because the receiving stream is impaired for low dissolved oxygen and to verify the effluent meets the water quality standard for Subsegment 040305, a minimum dissolved oxygen limit is included in the permit.

CBOD<sub>5</sub> is almost always limited in the sanitary wastewater permits. It indirectly measures dissolved oxygen. CBOD<sub>5</sub> is used to measure the amount of biodegradable material (or carbonaceous material) in the waste stream utilized by organisms during the decomposition of organic material over a five day period. CBOD<sub>5</sub> is limited when ammonia-nitrogen is a requirement of the permit. Oxygen demand testing does not determine the concentration of a specific substance; rather, it measures the effect of a combination of substances and conditions. The importance being these substances or conditions may consume dissolved oxygen needed by aquatic life. By limiting CBOD, the Office is assuring adequate treatment to reduce substances and conditions that consume oxygen in the receiving stream available for aquatic life.

**Fecal coliform**

Fecal coliform is listed as a cause of impairment. Monitoring for fecal coliform colonies is the best indicator for the potential presence of pathogenic organisms in wastewater. To protect against the development of pathogenic organisms in the receiving waterbody above water quality standards, fecal coliform limits have been established in the permit. Effluent permit limits are reflective of water quality standards for primary contact recreation, a designated use of the receiving stream.

**Phosphorus and Nutrients**

Phosphorus and nitrogen are nutrients. They consume dissolved oxygen (DO) needed to support aquatic life.

LDEQ's declaratory ruling (April 29, 1996) stated "DO is a direct correlate with overall nutrient impact is a well-established biological and ecological principle. Thus, when the LDEQ maintains and protects DO, the LDEQ is in effect also limiting and controlling nutrient concentrations and impacts." By limiting CBOD<sub>5</sub> in the permit to control dissolved oxygen, LDEQ is in effect limiting and controlling nitrogen and phosphorus.

Ammonia-nitrogen is an indicator by which to monitor the potential presence of nutrients (nitrite, nitrate, ammonia) remaining in a wastestream after the nitrification process has taken place. Ammonia is a common product of the decomposition of organic matter found in human waste. In the presence of dissolved oxygen, ammonia is converted to nitrate by nitrifying bacteria. (Nitrite is an intermediate product between ammonia and nitrate.) Thus, there is a relationship between ammonia and nitrate/nitrite. To protect against the potential introduction of nutrients into the receiving waterbodies at levels which exceed state water quality standards, ammonia-nitrogen limits have been placed in the permit. If ammonia-nitrogen is determined to be present at toxic levels, the permit may be reopened to require increased toxicity testing.

LDEQ's water quality standards read "The naturally occurring range of nitrogen-phosphorus ratios shall be maintained. To establish the appropriate range of ratios and compensate for natural seasonal fluctuations, the administrative authority will use site-specific studies to establish limits for nutrients.

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Nutrient concentrations that produce aquatic growth to the extent that it creates a public nuisance or interferes with designated water uses shall not be added to any surface water." The phosphorus impairment for Segment 040305 was not on previous 303(d) Lists. Phosphorus will be addressed in TMDLs, targeted for completion by 2011.

**LDEQ's Antidegradation Policy**

Louisiana has an EPA approved antidegradation policy found at LAC 33.IX:1109. The policy states that no lowering of water quality will be allowed in waters where standards for the designated water uses are not currently being attained. The policy further states the administrative authority will not approve any wastewater discharge or certify any activity for federal permit that would impair water quality or use of state waters. Waste discharges must comply with applicable state and federal laws for the attainment of water quality goals. Any new, existing, or expanding point source or nonpoint source discharging into waters of the state,... will be required to provide the necessary level of treatment to protect state waters. Additionally, no degradation shall be allowed in high-quality waters that constitute outstanding natural resources, such as waters in the Louisiana Natural and Scenic Rivers Systems or waters of ecological significance as designated by the Department.

The receiving stream is not an outstanding natural resource waterbody. The designated uses of Colyell Creek are primary and secondary contact recreation and the propagation of fish and wildlife. As discussed above the receiving stream does not meet its designated uses. However, the plant will incorporate 463 users that are currently on smaller or individual treatment units, 577 potential new users, and commercial development at the Satsuma/Interstate 12 interchange to include the proposed North Oaks Hospital and Diagnostic Clinic. The plant will lessen overall environmental impacts by 1) taking in effluents from the Brentwood Treatment Plant and two smaller plants and some users currently connected to the Town of Livingston Red Oaks Plants, 2) by drawing users from the current Red Oaks Facility, the new plant will lessen the impact on the scenic Tickfaw River (Red Oaks discharges to Hog Bayou, thence into the Tickfaw River), and 3) the facility will discharge to a detention pond capable of holding 10 days worth of effluent prior to discharging to Colyell Creek. The plant will also replace a substantial number of septic tanks and small treatment units with a larger treatment facility designed to meet much more stringent effluent limits, thus protecting state waters from further degradation.

R.S. 30:2018(B) specifies that the environmental assessment statement shall be used to satisfy the public trustee requirements of Article IX, Section 1 of the Constitution of Louisiana, but R.S. 30:2018(E)(2) indicates that a facility that is not a major facility for water discharges is not required to submit such information as a part of the permit application. SUMA Crossing STP is not a major facility. However, R.S. 30:2018(H) states, "Nothing in this Section [2018] shall relieve permit applicants or the department from the public trustee requirements set forth in Article IX, Section 1 of the Constitution of Louisiana and by the Supreme Court of Louisiana in *Save Ourselves v. Louisiana Environmental Control Commission*, 452 So.2d 1152 (La. 1984)."

To satisfy the public trustee requirements of the Louisiana Constitution, the applicant has provided detailed responses to the Environmental Impact Questions listed below. See EDMS Document No. 46078128 for complete responses.

**Applicant Comments/Responses (summarized from application)**

1. Have the potential and real adverse effects of the proposed facility been avoided to the maximum extent possible?

**Response:** The applicant has addressed odor and noise control, aesthetics, receiving water quality impacts, biosolids generation and disposal, drinking water and socio-economic impacts.

2. Does a cost benefit analysis of the environmental impact costs balanced against the social and economic benefits of the proposed facility demonstrate that the latter outweighs the former?

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**Response:** The applicant has compared the impacts from No.1 above to the benefits of the plant. The benefits (social and economic) are considerable and the impacts have been minimized or controlled.

3. Are there alternative projects which would offer more protection to the environment than the proposed facility without unduly curtailing nonenvironmental benefits?

**Response:** The proposed plant offers fewer environmental impacts: a smaller footprint, lower power requirements, and lower costs to the municipality than the alternative projects.

4. Are there alternative sites which would offer more protection to the environment than the proposed facility site without unduly curtailing nonenvironmental benefits?

**Response:** Alternative sites were considered. The proposed site is in the southeast corner of the school site. The location is over 150' from the school. Rationale for the selection included: hydraulics for the collection lines and lift stations are favorable, discharge is close to Colyell Creek, discharge will take some users from the Red Oaks Plant (discharge to the Tickfaw River, a scenic stream), discharge is through a detention pond and minimizes possible slug loading from plant, proximity to the school is mitigated by a fence, location is close to North Oaks Hospital and Diagnostic Clinic.

5. Are there mitigating measures which would offer more protection to the environment than the facility as proposed without unduly curtailing nonenvironmental benefits?

**Response:** Mitigating measures include: state-of-the-art technology, public exposure to inadequately treated sewage is eliminated and sanitation would be improved, water quality impact to the Tickfaw River is lessened, and the site footprint is less than 1acre.

**Effluent Limits**

The facility is a proposed discharger into an impaired stream not meeting all of its designated uses. New or expanding discharges in excess of 100,000 gallons per day should have appropriate effluent limitations that prevent impact on the impaired stream. According to LDEQ's Pre-TMDL Permitting Strategy (December, 2003), this Office will issue permits that 1.) maintain water quality of impaired streams and 2.) include a reopener clause in the permit to allow for more stringent limits if necessary. Maintaining water quality at existing levels means there will not be any additional significant contribution of pollutants to the waterbody. Thus, new or expanding discharges must have appropriate effluent limitations that prevent any additional impact on the impaired stream as per LDEQ Antidegradation Policy. As stated in the letter from Ferguson (EPA) to Region 6 Program Manager dated 1/6/03, a discharger meeting effluent limits of 5mg/l CBOD<sub>5</sub>, 2mg/l ammonia-nitrogen, and 5 mg/l dissolved oxygen would not cause or contribute to existing impairments. Following finalization of the TMDL, the treatment level required by the TMDL could then be implemented. Therefore, a reopener statement has been included in the permit. The Department of Environmental Quality reserves the right to impose more stringent discharge limitations and/or additional restrictions as a result of the TMDL.

TSS is not a component in the TMDL modeling for DO impairments or other impairments. Therefore, the SSELTP allows for TSS limitations to be established on a case-by-case basis (not to exceed secondary treatment regulations) depending on the type of treatment system. This facility will utilize an activated sludge treatment system, capable of meeting advanced TSS levels listed in the table on the next page.

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Final limits shall become effective on the effective date of the permit and expire on the expiration date of the permit.

Effluent Characteristic	Monthly Avg. (lbs./day)	Monthly Avg.	Weekly Avg.	Basis
CBOD <sub>5</sub>	21	5 mg/l	10 mg/l	Best Professional Judgment (BPJ) based on the letter from Ferguson (EPA) to Region 6 Program Managers dated 1/06/03.
TSS	63	15 mg/l	23 mg/l	Since there is no numeric water quality criterion for TSS, and in accordance with the current Water Quality Management Plan, the TSS effluent limitations shall be based on a case-by-case evaluation of the treatment technology being utilized at a facility. Therefore, a Technology Based Limit has been established through Best Professional Judgment for the type of treatment technology utilized at this facility.
Ammonia-Nitrogen	8	2 mg/l	4 mg/l	Best Professional Judgment (BPJ) based on the letter from Ferguson (EPA) to Region 6 Program Managers dated 1/06/03.
Dissolved oxygen	---	5 mg/l	---	Best Professional Judgment (BPJ) based on the letter from Ferguson (EPA) to Region 6 Program Managers dated 1/06/03.

\*\*This Dissolved Oxygen limit is the lowest allowable average of daily discharges over a calendar month. When monitoring is conducted, the Dissolved Oxygen shall be analyzed immediately, as per 40 CFR 136.3.

## Other Effluent Limitations:

## 1) Fecal Coliform

The discharge from this facility is into a water body which has a designated use of Primary Contact Recreation. According to LAC 33:IX.1113.C.5., the fecal coliform standards for this water body are 200/100 ml and 400/100 ml. Therefore, the limits of 200/100 ml (Monthly Average) and 400/100 ml (Weekly Average) are proposed as Fecal Coliform limits in the permit. These limits are being proposed through Best Professional Judgment in order to ensure that the water body standards are not exceeded, and due to the fact that existing facilities have demonstrated an ability to comply with these limitations using present available technology.

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## 2) pH

According to LAC 33:IX.3705 A.1., POTW's must treat to at least secondary levels. Therefore, in accordance with LAC 33:IX.5905.C., the pH shall not be less than 6.0 standard units nor greater than 9.0 standard units at any time.

## 3) Solids and Foam

There shall be no discharge of floating solids or visible foam in other than trace amounts in accordance with LAC 33:IX.1113.B.7.

X. PREVIOUS PERMITS:

LPDES Permit No. LA0125148: none issued

XI. ENFORCEMENT AND SURVEILLANCE ACTIONS:

## A) Inspections

The facility is proposed. There are no inspections on file for this facility.

## B) Compliance and/or Administrative Orders

The facility is proposed. There are no enforcement actions on file for this facility.

## C) DMR Review

The facility is proposed. No discharge monitoring reports have been submitted for the facility.

XII. ADDITIONAL INFORMATION:Reopener Clause

This permit may be modified, or alternatively, revoked and reissued, to comply with any applicable effluent standard or limitations issued or approved under sections 301(b)(2)(C) and (D); 304(b)(2); and 307(a)(2) of the Clean Water Act or more stringent discharge limitations and/or additional restrictions in the future to maintain the water quality integrity and the designated uses of the receiving water bodies based upon additional water quality studies and/or TMDLs, if the effluent standard, limitations, water quality studies or TMDL's so issued or approved:

- a) Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
- b) Controls any pollutant not limited in the permit; or
- c) Requires reassessment due to change in 303(d) status of waterbody; or
- d) Incorporates the results of any total maximum daily load allocation, which may be approved for the receiving water body.

The Louisiana Department of Environmental Quality (LDEQ) reserves the right to modify or revoke and reissue this permit based upon any changes to established TMDLs for this discharge, or to accommodate for pollutant trading provisions in approved TMDL watersheds as necessary to achieve compliance with water quality standards. Therefore, prior to upgrading or expanding this facility, the permittee should contact the Department to determine the status of the work being done to establish future effluent limitations and additional permit conditions.



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**Mass Loading Calculations**

Final effluent loadings (i.e. lbs/day) have been established based upon the permit limit concentrations and the design capacity of 0.5 MGD.

Effluent loadings are calculated using the following example:

$$\text{CBOD: } 8.34 \text{ lb/gal} \times 0.5 \text{ MGD} \times 10 \text{ mg/l} = 21 \text{ lb/day}$$

**Monitoring Frequency Requirements**

At present, the **Monitoring Requirements, Sample Types, and Frequency of Sampling** as shown in the permit are standard for facilities of flows between 0.5 and 1.0 MGD.

**Effluent Characteristics****Monitoring Requirements**

	<b><u>Measurement Frequency</u></b>	<b><u>Sample Type</u></b>
Flow	Continuous	Recorder
CBOD <sub>5</sub>	1/week	3 Hr. Composite
Total Suspended Solids	1/week	3 Hr. Composite
Ammonia-Nitrogen	1/week	3 Hr. Composite
Dissolved Oxygen	1/week	Grab
Fecal Coliform Bacteria	1/week	Grab
pH	1/week	Grab

**Pretreatment Requirements**

There are no categorical pretreatment users of the facility. Based upon consultation with LDEQ pretreatment personnel, **standard pretreatment language has been included in the permit.**

**Pollution Prevention Requirements**

The permittee shall institute or continue programs directed towards pollution prevention. The permittee shall institute or continue programs to improve the operating efficiency and extend the useful life of the facility. The permittee will complete an annual Environmental Audit Report **each year** for the life of this permit according to the schedule below. The permittee will accomplish this requirement by completing an Environmental Audit Form which has been attached to the permit. All other requirements of the Municipal Wastewater Pollution Prevention Program are contained in Part II of the permit.

The audit evaluation period is as follows:

<b>Audit Period Begins</b>	<b>Audit Period Ends</b>	<b>Audit Report Completion Date</b>
Effective Date of Permit	12 Months from Audit Period Beginning Date	3 Months from Audit Period Ending Date

**XIII. TENTATIVE DETERMINATION:**

On the basis of preliminary staff review, the Department of Environmental Quality has made a tentative determination to issue a new permit for the discharge described in this Statement of Basis.

**XIV. REFERENCES:**

Louisiana Water Quality Management Plan / Continuing Planning Process, Vol. 8, "Wasteload Allocations / Total Maximum Daily Loads and Effluent Limitations Policy," Louisiana Department of Environmental Quality, 2009.

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Louisiana Water Quality Management Plan / Continuing Planning Process, Vol. 5, "Water Quality Inventory Section 305(b) Report," Louisiana Department of Environmental Quality, 2006

Louisiana Administrative Code, Title 33 - Environmental Quality, Part IX - Water Quality Regulations, Chapter 11 - "Louisiana Surface Water Quality Standards," Louisiana Department of Environmental Quality, 2009.

Louisiana Administrative Code, Title 33 - Environmental Quality, Part IX - Water Quality Regulations, Subpart 2 - "The LPDES Program," Louisiana Department of Environmental Quality, 2009.

Low-Flow Characteristics of Louisiana Streams, Water Resources Technical Report No. 22, United States Department of the Interior, Geological Survey, 1980.

Index to Surface Water Data in Louisiana, Water Resources Basic Records Report No. 17, United States Department of the Interior, Geological Survey, 1989.

LPDES Permit Application to Discharge Wastewater, Town of Livingston, SUMA Crossing Sewage Treatment Plant, February 22, 2010.